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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,694	03/26/2001	Gonzalo Amador	TI-30592	9346

7590 12/15/2003
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EXAMINER

TOLEDO, FERNANDO L

ART UNIT	PAPER NUMBER
2823	

DATE MAILED: 12/15/2003

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 20031204

Application Number: 09/817,694
Filing Date: March 26, 2001
Appellant(s): AMADOR ET AL.

Michael K. Skrehot
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 28, 2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

The brief does not contain a statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief. Therefore, it is presumed that there are none. The Board, however, may exercise its discretion to require an explicit statement as to the existence of any related appeals and interferences.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

No amendment after final has been filed.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1 – 5, 12, 16, and 17 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,830,805	Shacham-Diamand et al.	11-1998
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(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 – 5, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shacham-Diamand et al. (U. S. patent 5,830,805 A).

In re claims 1 and 12, Shacham-Diamand, in the U. S. patent 5,830,805 A; figures 1 – 7C and related text, discloses maintaining several wafers approximately parallel to each other at predetermined distances by supporting an edge of each of the wafer between several of support means (figures 2 and 5); immersing the wafers into an electroless plating solution flowing in laminar motion at constant speed substantially parallel to the active surface of the wafers (column 4); rotating each of the wafers at a constant speed and synchronously with each other by turning each of the several of support means (figure 5, column 7); creating periodic relative

motion in changing directions between the plating solution and the wafers, thereby uniformly plating layers onto the exposed metallization by controlled electroless deposition (column 7).

In re claim 2, Shacham-Diamand discloses, the exposed metallization are non-oxidized copper metallization of bond pads positioned in the integrated circuits having copper metallization (column 5).

In re claim 3, Shacham-Diamand discloses, wherein the several wafers includes between 10 and 30 wafers (column 7).

In re claim 4, Shacham-Diamand discloses, wherein the relative motion includes periodic superposition of directions and speeds of the motion of the wafers and the motion of the solution, thus creating periodically changing wafer portions where the directions and speeds are additive and where the directions and speeds are opposed and subtractive (column 7).

In re claims 5 and 16, Shacham-Diamand discloses inserting the wafers into a clean-up or presoak bath; removing the wafers from the clean-up presoak bath; and inserting the wafers into the plating solution (column 2).

In re claim 17, Shacham-Diamand discloses wherein the step of immersing the wafer includes the wafer and the support means in a tank and the step of flowing plating solution includes flowing the solution from the bottom of the tank to the top of the tank (Figure 5).

(11) Response to Argument

Appellant argues that Shacham-Diamand does not show “maintaining a plurality of said wafers approximately parallel to each other at predetermined distances by supporting an edge of each said wafer between a plurality of support means” and “rotating each of said wafers at

Art Unit: 2823

constant speed and synchronously with each other by turning each of said plurality of support means." Appellant also argues that Figure 5 does not include sufficient detail to show how the edges of the wafers 220 are held in holder 226.

Examiner respectfully submits that holder 226 supports the edges of the wafers 220. Holder 226 holds the wafers at the edges as appreciated in Figure 5 by four circles at the four corners of the stack of wafers 220 and those circles are connected to each other by lines that in turn support wafers 220. The claims do not exclude the support means being connected and therefor encompass the support means disclosed by Shacham-Diamand.

Appellant also argues that Shacham-Diamand is concerned with the deposition of copper on a barrier layer such as Ta or TiN and is not ^{Concerned with} ~~concerned on~~ plating copper on non-oxidized copper metallizations.

Examiner respectfully submits that Shacham-Diamand teaches plating copper on non-oxidized copper metallizations. On column 5, Shacham-Diamand discloses plating copper on a barrier layer and one of skill in the art would arrive ^{at} ~~to~~ the conclusion that as the copper is being plated it is plated by layers one on top of another and the process specifically prevents the oxidation of copper as ~~it~~ can be seen in lines 17 and 18 of column 5.

For the above reasons, it is believed that the rejections should be sustained.


Application/Control Number: 09/817,694
Art Unit: 2823

Page 6


Respectfully submitted,

FToledo
December 4, 2003

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